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Facts and Fiction:
Lessons from Research on Faculty
Motivators and Incentives to Teach Online

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1. Introduction

By 2012, most universities in the United States and some European universities have greatly augmented their online course offerings; those courses increasingly have been taught by adjunct (also called contingent or part-time) instructors. In view of the fact that it costs less for universities to hire adjunct instructors since they receive no benefits beyond a small salary per course, it would seem that faculty would be leaping at the opportunity to teach online and be recognized for their online contributions to offset this increased use of adjunct instructors. Indeed, according to a number of universities' chief academic officers, almost 50% of faculty accepted the value and legitimacy of online education (Allen and Seaman, 2008). Yet, almost ten years after the author's first research study on this subject (Gannon-Cook, 2003), the researcher found that faculty, both tenured and untenured, were still demurring from teaching online; she was stunned to discover that the rates of faculty teaching online remained low, particularly in the United States. During that same timeframe, ten years, there had been dramatic growth of students taking online courses (one in six students in the U.S. taking online courses as of 2006 [Pope, 2006, 1]). Data gathered from the researcher's university, as well as from a number of universities in the United States and Europe, indicated that faculty online participation percentages, despite growing numbers of online courses, averaged around twenty-five to twenty-eight percent (Ansah, and Johnson, 2003; Beggs, 2002: Bender, Wood, and Vredevoogd, 2004; Brabazon, 2001; Brookfield, 1995; Cavanaugh, 2005; Chang, 2008; Elaine and Seaman, 2006; Huffman and Miller & 2001; Jones and Johnson–Yale, 2005; Kosak, Manning, Dobson, Rogerson, Cotnam, Colaric, and McFadden, 2004;Lazarus, 2002; Lin, 2003; Maguire, 2002, 2006; Murphy, 2011; Offer, Barth, Lev, and Sheintok, 2003: O'Quinn and Corry, 2003; Paloff and Pratt, 2001; Zhen, Garthwait, & Pratt, 2008). So, a question remained that, if the numbers of online courses were burgeoning and almost 50% of faculty acknowledged the value and legitimacy of online education, why were so few of the faculty teaching online?

The scope of this study was to look at which factors could positively motivate faculty to teach online, and in particular, to look at whether the use of adjunct faculty in the universities offering online courses affected the motivation of faculty to teach (or not teach) online courses. This study looked at data collected from thirty-eight studies of U.S. and European universities (see Appendix A) and found that, while the primary motivators for

faculty to teach online were intrinsic, such as the desire to make college education available to students who would not, otherwise, be able to attend college, and the desire to extend course flexibility (Betts, 1998; Bower, 2002; Bruner, 2007; Chen, 2008; Gannon-Cook, 2003; Gannon-Cook, Ley, Warner, & Crawford, 2009; Johnstone, 2000; Maguire, 2002, 2006; O'Quinn, 2003; Parker, 2003; Wolcott, 2002a,2002b, 2006, 2008; Zhen, Garthwait, & Pratt, 2008), other factors, such as increased workload for online teaching, lack of credit toward tenure and promotion, and lack of extrinsic motivators, such as stipends and course releases, deterred and demotivated as much as seventy-four percent of faculty from teaching online (Beggs, 2002; Betts, 2009; Betts, & Sikorski, 2008; Bower, 2002; Chen, 2008; Gannon-Cook, Ley, Warner, & Crawford, 2009; Johnstone, 2000; Lin, 2002; O'Quinn, 2003). Similar events were also occurring in countries, such as the "bric" countries of Brazil, Russia, India, and China, and, while some research from these countries were mentioned in this research, for the purposes of this study, none were included in the thirty-eight studies utilized herein. (Because it is estimated that the United States currently serves one-third of the world's students engaged in cross-border education (Hezel & Mitchell, 2006), the majority of this research were U. S. studies). Future studies of faculty motivators and the use of adjunct instructors in online courses within these countries can be conducted as the body of research continues to accumulate on this subject.

Findings and recommendations throughout the thirty-eight studies utilized in this research cited similar proposed remedies in order to persuade and support faculty to teach online, such as encouraging faculty voice and faculty participation in university policy, practice, online decisions, online course design and delivery, research credit towards tenure, and extrinsic motivations, such as course releases or monetary stipends. It was unclear, however, as to whether any of the recommendations from those studies were adopted by the administration of those universities (Beggs, 2002; Betts, 2009; Betts & Sikorski, 2008; Birch & Burnett, 2009; Bollinger & Wasilik, 2009; Bower, 2002; Gannon-Cook, 2003; McLean, 2006a,b;O'Quinn, 2003, 2004; O'Quinn, & Corry, 2002; Panda & Mishra, 2008; Quinn, Schifter, 2000a,b; Schifter, 2002; Soldner, Lee, Duby, 2004; Trower, 2008; Wolcott, 2006).

Another important research question that needed to be asked (and was asked in a number of the thirty-eight studies) was whether the universities that used large percentages of adjunct instructors for online courses found any significant differences in student retention rates in those courses. While the increased use of adjuncts was widely acknowledged, this factor was seldom mentioned as a factor in studies about faculty motivation (or demotivation) to teach online courses, so the opportunity to look at a number of studies addressing faculty motivation would provide some insights and inferences that could be made for how to best motivate faculty to teach online. Moreover, since much of the research has not focused on whether faculty teaching online brings higher student retention and completion rates than adjunct instructors, this factor is also addressed in this study.

If the research does document higher student retention with full-time faculty instructors as opposed to adjunct faculty instructors, as the studies utilized in this research seem to indicate (American Association of University Professors, 2003; Ansah & Johnson, 2003; Benjamin, 2002; Chapman, 2011; McArthur, 1999; Schibik & Harrington, 2004; Southern Area Southern Association of Colleges and Schools, 2010; Xenos, Pierrakaes, C., & Pintelas, 2002), then it might be productive to review the recommendations of those studies to see which factors would work best to best secure and retain full-time faculty to teach online courses.

What remains clear, regardless of the research, is that the universities offering online courses continue to grow rapidly and the use of increasing adjunct faculty to teach those courses also continues to dramatically increase. It would also follow that if there were particular factors that could be singled out to shed light on how to enlist and retain faculty to teach online courses, then it would be worth distilling the research and providing administrators with that data.

Definition of Terms

While the terms distance education, online learning, and electronic learning (elearning) have similar meanings, there may be subtle differences ascribed to each in other research, but for the purposes of this study, these terms will be used interchangeably.

2. Review of the literature

This study looked at thirty-eight studies to assess which factors could positively motivate faculty to teach online; the study also looked at whether the increased use of adjunct instructors motivated or deterred faculty from teaching online courses. The findings revealed that the primary reasons that motivated faculty to teach online were primarily based on intrinsic motivators, which should come as no surprise since most faculty enter academia motivated intrinsically to teach and help others. But later studies, after 2003, pointed to extrinsic motivators having more positive effects on influencing faculty to teach online courses.

In the studies of faculty motivation to teach online that were conducted in the early twenty-first century, it was found that the majority of faculty choosing to teach online were motivated for largely altruistic reasons, similar to the same reasons they chose to teach (Betts, 1998; Schifter, 2000 a, b; Johnston, Alexander, Conrad, & Fieser, 2000; Gannon-Cook, 2003; Maguire, 2002; Parker, 2003; Schifter, 2000a, b; Wolcott, 1996, 2002). Of these, the two intrinsic motivators most often identified by faculty in those studies were: "ability to reach new (student) audiences that could not attend classes on campus; and, greater course flexibility for students" (Gannon-Cook, p.137). In addition to these primary motivators, early adopters also enjoyed learning new technologies and having the opportunity for personal growth through the experience of teaching online (Betts, 1998; Bower, 2002; Bruner, 2007; Chen, 2008; Gannon-Cook, 2003; Gannon-Cook, Ley, Warner, & Crawford, 2009; Johnstone, 2000; Maguire, 2002, 2006; O'Quinn, 2003; Parker, 2003; Wolcott, 2002a, 2002b, 2006, 2008; Zhen, Garthwait, & Pratt, 2008).

While intrinsic motivators continued to prevail over the last ten years as the primary motivators, many of the early adopters no longer chose to teach online after a short length of time teaching online courses. The residual effects of early adoption often included faculty sharing their feedback with colleagues about their online experiences, their stories that told of many hours spent handling hundreds of emails, extra time spent answering emails, posting to discussion conferences, and helping students learn how to navigate online courses, all of which often deterred rather than encouraged other faculty to join their online teaching ranks (Betts, 1998; Bower, 2002; Johnston, Alexander, Conrad, & Fieser, 2000; O'Quinn, 2003; Southeast Missouri State University, 2001, Wolcott, 2002, 2006). For early adopters the added incentives included the opportunity to lead the cause of online teaching as role models, although, after heavy investments of time and energy teaching online, they

often did not often remain teaching online, and in some cases, actually discouraged other faculty from teaching online (Bower, 2002; Chang, 2007; Culp, Riffee, Starrett, Sarin, & Abrahansen, 2001; Distance Education Report, 2001; Jacobsen, 2000; Jones, Johnson-Yale, 2005; Lazarus, 2003; Lin, 2002; Kosak, Manning, Dobson, Rogerson, Cotnam, Colaric, & McFadden, 2004;Maguire 2002; O'Quinn & Corey, 2002; Paloff & Pratt, 2001; Wolcott, 2002a; Zhen, Garthwait, & Pratt, 2008).

There were also other factors that were demotivating and deterred faculty from teaching online. In some cases teaching online actually posed real threats to faculty quests for tenure, factors such as the increased workload involved in online teaching, the lack of credit toward tenure and promotion for online teaching, and the lack of other incentives, such as raises, or course stipends. So, while administration in many universities touted as much as fifty percent of faculty being interested in teaching online, in truth, as much as seventy percent of faculty in the studies still declined to teach online (Beggs, 2002; Betts, & Sikorski, 2008; Bower, 2002; Chen, 2008; Gannon-Cook, Ley, Warner, & Crawford, 2009; Johnstone, 2000; Lin, 2002; Murphy, 2011; O'Quinn, 2003; Parker, 2003).

The recommendations throughout these studies repeatedly cited remedies to provide faculty with incentives to teach online that did not involve large investments of monies, such as the encouragement of faculty voice, the inclusion of faculty in university policy and practice decisions, and the awarding of online teaching credit towards tenure (Ansah, & Johnson, 2003); Betts, 1998; Betts, 2008; French, 2001; Gannon-Cook, Ley, Warner, & Crawford, 2009; Maguire, 2006; Schifter, 2000a,b, 2002; Soldner, Lee, Duby, 2004; Wolcott, 1996, 2002a,b; Zhen, Garthwait,& Pratt, 2008). The recommendations also included the awarding of extrinsic motivators that would incur increased administrative costs, such as course releases or monetary stipends, but could also prove to be a profitable investment if it resulted in higher student retention and online course completion rates (Betts & Sikorski, 2008; Betts, 2009; Bollinger & Wasilik, 2009; Johnston, Alexander, Conrad, & Fieser, 2000; Maguire, 2002, 2006; McLean,2006b; O'Quinn, 2002, 2003; Quinn, 2008; Parker, 2003; Wolcott, 2006, 2008; Zhen, Garthwait, & Pratt, 2008).

Some of the factors that received the largest number of responses from faculty in those thirty-eight studies were extrinsic, and those factors would provide distinct benefits to faculty teaching online courses. So, while intrinsic factors may have first inspired participation in online teaching, research studies, such as those conducted by Beggs (2002), Bowers (2002), Gannon-Cook (2003), Stevens (2001), and Wolcott (2002a,b), reported that faculty participating in continued online teaching were often supported by extrinsic factors, such as increased salary, course releases, and credit toward tenure.

Lack of incentives has become an increasing barrier to institutional growth in offering distance education. Studies, such as that of the Distance Education Report (2001), Southeast Missouri State University (2001), Zhen, Garthwait, & Pratt (2008), found that issues related to faculty were of greater relevance to faculty teaching online than technological issues. While technological issues could become a concern, they were often not elevated to a level of anxiety by faculty members until they had taught online at least one or more times. But once faculty members began teaching online, they often assessed the time invested and, despite their commitment to be of help to the students, started to take inventory of the time demands required to teach online courses. Since salaries often do not keep pace with the rising costs of living, these faculty members were often faced with basic physiological needs

that must still be met, such as rent, and food (Gannon-Cook, 2010). When faced with the increased demands of teaching online for their home universities, several studies even indicated that there were faculty choosing to teach online for other universities instead of teaching online for their home universities (where they were employed full-time) because there was no additional compensation for teaching online at their home universities (Bowers, 2002; Gannon-Cook, 2003; Johnston, Alexander, Conrad, & Fieser, 2000, Maguire, 2002; Parker, 2003; Wolcott, 2006).

The use of increasing adjunct faculty to teach online courses will also continue, largely because there is such a strong need for instructors for online courses and programs in the rapidly expanding world of virtual education. But there are other reasons too for this trend that are more bottom line: adjuncts do not require benefits, such as insurance, and adjuncts can be paid far less than faculty. With these savings apparent to university administrators, there is often a rush to the use of adjunct instructors in online courses, and in fact, the trend to hire more or all adjunct instructors is the case of many for-profit universities. Without a thorough investigation, there could be a lack of understanding by administration as to the costs and benefits of enlisting adjunct instructors rather than full-time faculty to teach online.

High student attrition in online courses and programs (average 40%-60%) (Betts & Sikorski, 2008; Gannon-Cook, 2003; United States Distance Learning Association, 2001, 2007) could end up costing universities more than the costs associated with employing full-time faculty. A look at what student attrition costs universities would be worth the time invested, particularly since online attrition rates (in the United States) range from 40% to 50%, and can be as high as 70% to 80% (Betts & Sikorski, 2008; National Center of Educational Statistics, 2010, 2011). Attrition can be even higher in online programs, often losing 40-60% of first year students (Betts, 2008). Further research into student retentions and course completions might provide alternative administrative solutions that reap greater financial benefits. Even the retention of one or two students in each online course could add up to a cumulative effect in the overall retention rates of students which, in turn, could also have significant bottom line ramifications financially for the university in both course and degree completions (National Center of Educational Statistics, 2010, 2011). According to the National Center of Educational Statistics (2010, 2011), if university retention rates in online courses and programs could be raised to the average 78.6% retention rate reported for traditional universities, or even if the financial bottom line could be improved by five to eight percent in revenues with these retention increases, this could translate to several million dollars over a several-year period for the university.

These numbers could be very compelling to administrators looking for ways to increase revenues and retain students and worth further investigation at their universities. The American Association of University Professors (AAUP), an organization co-founded by John Dewey to provide a criterion of quality higher education academic standards, cites.

The dramatic increase in the number and proportion of contingent faculty in the last ten years has created systemic problems for higher education. Student learning is diminished by reduced contact with tenured faculty members, whose expertise in their field and effectiveness as teachers have been validated by peer review and to whom the institution has made a long-term commitment. Faculty governance is weakened by constant turnover

and, on many campuses, by the exclusion of contingent faculty from governance activities. (American Association of University Professors, 2011, p.2)

While there are other factors that contribute to student attrition in online courses, such as family responsibilities, job requirements, and other personal factors, attrition can still be reduced with careful attention, such as advising, mentoring, and nurturing, and all these can generate university allegiance, but do prove more challenging for universities without strong cores of full-time faculty (Allen & Seaman, 2010; Betts, 2008; Howell, Laws, & Lindsay, 2004; Southern Area Southern Association of Colleges and Schools, 2010). Interactivities beyond discussion boards and drop boxes can create bonds based on "human interaction fostered through instruction, programming, and personalized engagement" (Betts, 2008, p.399). Adjunct instructors can do these kinds of interactivities, but, like their students, they too have other responsibilities, such as full time jobs elsewhere, or a multiple of universities where they teach online. So, while they may teach effectively, they don't have time to get to know their part-time employers' university cultures, nor do they have much time to mentor and nurture, or generate university allegiance in their students when they don't have that allegiance themselves. Full time faculty members' careers revolve around not only teaching, but service and research, and they can nurture their students with consistency and follow through with their students that is less possible with adjunct instructors. There are some studies that look at whether the consistency of full-time faculty teaching online courses increases student retention and completion rates in online courses (Benjamin, 2002; Betts & Sikorski, 2008; Bower, 2002; Bruner, 2007; Chapman,2011 Gannon-Cook, 2003; Johnston, Alexander, Conrad, & Fieser, 2000, Luzer, 2011; Maguire, 2002; Wolcott, 2006]). To-date, however, the trend towards the use of adjuncts in teaching online courses continues and so does the growing argument in many universities against full time faculty.

In the United States and in the European countries, the standards established by accrediting agencies like the Southern Association of Colleges and Schools (2003), and by organizations, like the American Association of University Professors (2010), state the university should maintain a parity of adjunct instructors to full-time faculty. For example the Southern Association of Colleges and Schools (2010), which monitor accreditation standards for most southern states in the United States, requires a parity of no more than one full-time faculty to four adjunct instructors; moreover, it also mandates that "at least 25 percent of the discipline course hours in each major at the baccalaureate level (must be) taught by faculty members holding the terminal degree" (p.28). Due to the high demand for online instructors, it may become increasingly more difficult to maintain this parity without enlisting more university faculty to teach online or disregarding accrediting agency guidelines, and this again raises the question of how faculty can be motivated to teach these growing numbers of online courses.

While a number of the studies still maintained a need to intrinsically motivate faculty with "atta boys" (verbal or written compliments) for their teaching online (Ansah & Johnson, 2003; Beggs, 2002; Bruner, 2007; Cavanaugh, 2005; Jacobsen, 2000; O'Quinn, 2003; Schifter, 2000a, b; Wolcott, 2006; Zhen, Garthwait, & Pratt, 2008), studies conducted in the last seven - eight years have pointed to the need for extrinsic motivators to enlist and keep faculty involved in teaching online. Among those studies recommending extrinsic motivators, there was some argument about which incentives worked best, but the primary extrinsic

motivators in a number of studies were reduced teaching load or release time (Betts, 1998, 2009; Bower, 2002; Schifter, 2000a,b; Gannon-Cook, 2003; Johnston, Alexander, Conrad, & Fieser, 2000; Wolcott 2002a, 2002b); faculty training (Bebko, 1998; Beggs, 2002; Betts, 2009; Clarke, Butler, Schmidt-Hansen, & Somerville, 2004; Culp, Riffee, Starrett, Sarin, & Abrahansen, 2001; Donovan, 2004; Edwards, 2004; French, 2001; Lin, 2002; Twigg, 2000); and money, such as stipends, raises, or additional payments for teaching online (Betts, & Sikorski, 2008; Bower, 2002, Bruner, 2007; Gannon-Cook, 2003,2009; Gannon-Cook, Ley, Crawford, Warner, 2009; Wolcott, 2002ab, 2006).

But there were also studies that looked at negative motivators to teaching online: (Akbulut, Kuzu, Latchem, Odabasi, 2007; begs, 2002; Betts, 1998; Bower, 2002; Bruner, 2007; Gannon-Cook, 2003; Johnston, Alexander, Conrad, & Fieser, 2000; Kwoumka & Gannon Cook, 2003: Lin, 2002; O'Quinn, 2003: Parker, 2003; Schifter, 2002; Twigg, 2000; Wolcott, 2002a, b). The studies' findings suggested that there were factors that could put off faculty from even considering teaching online (Beggs, 2002; Betts, 1998; Bruner, 2007; Gannon-Cook, Ley, Crawford, Warner, 2009; Maguire, 2002, 2006; O'Quinn, & Corry, 2002; Schifter, 2000a, b; West, Waddoups, & Graham, 2007; Wolcott, 1996, 2002a, b); each study contained similar findings, but there were slight variances in the factor rankings. The majority of the studies listed the factors as:

lack of salary;
lack of merit pay;
lack of credit or promotion;
lack of recognition and award;
lack of royalties;
lack of release time;
concern about faculty workload;
lack of technical support;
lack of support from colleagues;
lack of support from Dean and university administrators

Many of those studies also cited several intrinsic deterrents that were voiced by faculty reticent to teach online; the two intrinsic factors most often cited were:

concern over the quality of instruction for online students; and concern over the quality of online courses

Since each study's findings related to the university where that study was conducted, findings could not be generalized, but the repeated mention of the above-listed deterrents, both extrinsic and intrinsic, throughout the studies, pointed to the strong likelihood that these factors represented at least a representative number of faculty members' feelings about teaching online.

While the findings mentioned above were the most cited in the studies researched herein, there were also some surprising findings that surfaced in a number of studies that might also be worth looking at when considering which factors would best motivate faculty to teach online. There were other factors that were not singled out as meaningful to faculty, but that may have been because the factors were not understood by faculty who had not previously taught online. Perhaps the reasons may have been that those faculty were just becoming aware of the potential time commitments required for online teaching (faculty

who had previously taught online were quick to share their online teaching experiences with fellow faculty members, but there still seemed to be a general lack of awareness of the time involved in teaching online classes). In addition, little or no evidence may have been available to the faculty participating in these studies that would provide insights into time required to create the content and deliver course materials in online environments, or the time to work with the instructional designer or design teams that would co-create the online courses with the faculty serving as content matter expert for the online course(s). The steps involved in designing, implementing, and teaching online extended beyond traditional in-class preparation time, largely because online courses required more online interactivities, more graphic representations, and more attention to cultural implications, all while there were additional considerations, such as how the course materials would be housed within the learning management system, and how the technology would be utilized inside and outside the course (Ansah, & Johnson, 2003; Betts, 1998; Bender, Wood, & Vredevoogd, 2004; Cavanaugh, 2005; Chang, 2007; Chang 2008; French, 2001; Harley, 2002; Jacobsen, 2000; Lazarus, 2003; Weller, 2006).

A surprising finding was how low the ranking was over the factor of copyright ownership rights, and in some studies this factor was not even a consideration by faculty who had participated in the studies. Few faculty seemed to be concerned over copyright ownership rights, or royalties, at least as of the latest studies reviewed for this research (Betts, 2009; Gannon-Cook, Ley, Warner, & Crawford, 2010; Quinn & Trower, 2008; Wolcott, 2006; Zhen, Garthwait, & Pratt, 2008). (Concern over royalties was listed as one of the deterrents to faculty participating online in a number of the studies used in this research, but this factor ranked at most, fourth on the list of factors that could affect participation in online courses (Gannon-Cook, Ley, Crawford, Warner, 2009; Maguire, 2002, 2006; O'Quinn, & Corry, 2002; Schifter, 2000a, b; Wolcott, 1996, 2002a, b). Part of the reason for the lack of faculty interest or concern about ownership or royalties may have been because many faculty usually designed their own on-ground (traditional classroom) classes as a part of their teaching duties for the university; they did not generally copyright their courses, nor did they receive any royalties, or additional compensation for their courses. So it would follow that faculty that had not taught online would not think about copyrights or the potential problems that could surface with respect to contracts for designing courses that could either include payments for the design of courses and royalties, or "work for hire" courses designed for the university without any royalty rights. Without faculty being presented with the pros and cons of online course contracts, it would make sense that faculty who had not taught online previously would not pay attention to this factor when responding to surveys requesting their prioritizing of copyright considerations in designing online courses.

Another factor that was mentioned in many studies (Beggs, 2002; Betts, 1998, 2008; Bollinger & Wasilik, 2009; Bower, 2002; O'Quinn, 2003; O'Quinn & Corry, 2002; Quinn & Trower, 2008; Wolcott, 2006; Zhen & Pratt, 2008) was "lack of support from dean and university administrators" and that factor was ranked in the top ten factors in the list of motivators (or demotivators) to participate in distance education. Since there was no clear interpretation of what would constitute greater support from the deans or administrators, it was hard to parse out what that would mean, but the studies cited generally indicated that "support" seemed to mean that the dean and administration understood the faculty member's commitment's to teaching online with accommodations, such as teaching load adjustment for teaching online, updated technology training and software updates, or simply by

providing positive administrative support. In some comments generated from faculty it seemed that a number of respondents felt that faculty should be included in university decisions, particularly with respect to curricular and design decisions that affected both faculty and students. Other considerations, such as credit toward tenure, could also fall under the category of "support" and would also acknowledge the work involved in teaching online.

This study did not look at trends in other countries, so research will need to be conducted to see if the recommendations from studies, such as the ones cited herein, would be applicable to universities offering online courses and programs in those countries. For universities seeking to provide cross-border education, it would make sense to consider the cultures and traditions of those countries first and implement measures that honor those priorities, then conduct studies, similar to the ones cited here, that address the use of adjuncts and full-time faculty, and the bottom-line cost comparisons of using more adjuncts or full-time faculty to teach online courses.

One Taiwanese study of online students pointed to a lack of adequate mentoring or advice from experienced and knowledgeable faculty as one of the most frequently cited sources of delay in completing their degrees (Kuo, 2011). It was also mentioned in several Chinese studies (Chang, Martin, Schellens, 2010; Huang, Dedegikas, Walls,2009; Zhang, Zhang, Duan, Fu, Wang, 2010) that it was important for the university to be aligned with its mission and that "Chinese students are used to the classroom teaching style. The reason for this situation could be that the traditional face-to-face class is still the main style of teaching in China" (Khou, 2011, p.6). Questions were also raised about whether the universities studied articulated global learning as a goal for its undergraduates; there were also questions about how faculty were rewarded for their teaching and scholarship (Chapman, 2011) and there were comments that cross-border providers may not meet each country's priorities, and perhaps these locales are better served by their local universities than by foreign providers that more frequently deliver what they already have developed elsewhere.

A review of research on Brazilian universities (Abrahão & Malanga, 2010) revealed universities have been undergoing a turning point in Brazil's brief history of higher education (the first Brazilian university, the University of Sao Paulo, was only founded in 1934). Therefore, the analysis has evidenced that "public policies for higher education must signal if they want to provide professional teaching in higher education, geared toward the job market, or rather, teaching from a real university, thus basing its mission, ethos and episteme in the 21st century on knowledge production and transmission" (p.43). No doubt if the choice is the latter, then there will be a strong need for full-time tenure-track and tenured faculty. While Brazil is also turning more to online education, it appears that there will be an emphasis placed on a "real university" experience which may necessitate traditional university standards and faculty, and will include the enlistment of faculty to teach online, so motivating faculty will become more important as the universities continue to grow. Future studies may reveal the progress of online courses and degree programs throughout the major Brazilian universities over the next decade.

In summary, there were a number of factors cited in the thirty-eight studies that could enlist and retain faculty to teach online courses and also allow the universities to best focus on their student populations and financial needs. If some of these recommendations have been adopted in the universities studied, then perhaps there can be follow-up studies that can

generalize the findings so that they can be extended to other universities and to online cross-border education, or replicated in universities in other countries.

3. Analysis

This section describes the methods used to investigate variables that could motivate or inhibit faculty to teach and remain teaching online courses. This study utilized a qualitative, postpositivist methodology which conducted historical research to review over thirty-eight studies to uncover data that could reveal which factors best motivated faculty to participate in teaching and designing online courses. The analysis included thick description in order to uncover as much data as possible that could identify "reasonable implications for practice from their findings" (Gall, Borg, Gall, 1996, p.748).

In addition, the actor-network theory was also introduced as a viable methodology for this study since it is primarily used to study social, economic, and cultural effects, particularly in science and technology studies (STS), and to apply the STS principles across academic disciplines to higher education. (STS has already been documented effectively in disciplines other than science, most notably in organizational analysis, economics, sociology, and anthropology (Callon, 1986; Latour, 1987, 2005; Law & Hassard, 1999; Law, 1992). The relationships among technological innovations, faculty, and higher education administration are viewed in socially embedded contexts so as to get a more comprehensive look at how the findings and recommendations from the studies on faculty motivation could be utilized effectively.

Historical Analysis

In an effort to better understand how faculty, as an important element in student retention and successful completion of online courses, can be motivated to teach and remain teaching online courses, extensive research into studies on faculty motivation was undertaken by the researcher; at least 36 studies on faculty motivation were found which utilized a variety of quantitative and mixed-method methodologies. In addition a thorough literature review (see Review of Literature) supplemented the data provided from the studies. Repeatedly, intrinsic motivation was cited as an important contributor to faculty motivation to teach online, primarily because teaching online allows students to take courses and pursue a degree when they may not, otherwise, have access or opportunity to do so; and the desire to be helpful, along with the chance to contribute to the betterment of mankind, assures the inclination of faculty to take up the challenge of teaching online. Studies prior to 1999 (Bonk, 2001; Bower, 2002; Johnston, Alexander, Conrad, & Fieser, 2000; Maguire, 2002; O'Quinn, & Corry, 2002; Schifter, 2000a, b; Wolcott, 1996) included a larger number of early DE adopters who were more intrinsically motivated to participate in DE. (An early adopter is someone who takes on or embraces an innovation in the early phases of implementation). These respondents reported that the intrinsic rewards of accomplishment were enough incentive to participate in DE (Bonk, 2000; French, 2001; Husman & Miller, 1999; Johnston, 1999; Wilson, 1999). However, surveys conducted after 2000 included responses from more late adopters of DE (a late adopter being someone who has reservations about implementing the innovation and refrains from adoption until he/she is more comfortable with the innovation), and these respondents were more motivated by extrinsic rewards (Beggs, 2002; Bower, 2002; Johnston, 2000; Bollinger & Wasilik, 2009; Bruner, 2007; Cavanaugh, 2005;

Gannon-Cook, Ley, Crawford, Warner, 2009; Maguire, 2006; McLean, 2006b; O'Quinn, & Corry, 2004; Panda, & Mishra, 2008; Wolcott, 2006; Zhen, Garthwait, & Pratt, 2008).

Maslow stated there were two basic levels of human needs that motivated humans: lower level needs, such as physiological, security; and, higher level needs, such as esteem of self and others, and self-actualization (Maslow, 1970). Once the lower level needs are met, those needs become less important and the motivation rises towards the higher level needs, yet the physiological and security needs must be met, or primal survival fears surface. Work has been modern human's way of earning the means of meeting the physiological and security needs, and without a feeling of some degree of security in that work, it is hard to move up to the next order of higher level needs. Extrinsic motivation emphasizes that satisfaction from an activity is contingent upon a reward; and extrinsic motivators include a variety of offerings for faculty, such as salary increases, merit pay, course overloads, tenure or university recognition in the form of lab space, and monetary stipends (Gannon-Cook, 2010).

If a large number of studies recommend that universities give faculty more extrinsic rewards and include faculty in major decisions, such as their distance learning, then why have so many universities remained intransigent about implementing these recommendations and offering these incentives to faculty? The answer is that, usually, college presidents, deans, and administrators of universities would respond with two words: "the economy." But avoiding, or worse, refusing, to consider faculty concerns or motivations, particularly about teaching online, could result in problems that could be avoided if university administrators addressed some of the important questions and concerns of faculty. So, what are the true savings and what are the potential costs of failing to consider the recommendations of the many studies that addressed faculty concerns about teaching online?

In truth, some of the extrinsic factors with the highest rankings in the studies cited in this research (See Appendix A) would not cause the university to substantially increase its faculty budgets. These were: training, reduced teaching load, and support and encouragement from the dean or administration (Betts, 1998; Gannon-Cook, 2003; Johnston, Alexander, Conrad, & Fieser, 2000; Wolcott, 2002a, b). But highest on the list of factors that would positively influence faculty to teach online were: increase in salary, job security (credit towards tenure), and monetary support/stipends; these would all substantially add to the university's expenses. However, it bears reviewing the costs incurred for offering extrinsic rewards to the costs to enlist and retain faculty, particularly in online teaching. It might be worth exploring, particularly compared to the costs of not only the increased costs of offering any or all of these extrinsic motivators, but to also look at the costs of adjunct salaries, possible costs of lost opportunities for increased online course offerings, or, worse, the costs of student attrition or lower student enrollments due to unavailability of full-time faculty (Bender, Wood, & Vredevoogd, 2004; Benjamin, 2002; Florida, State of, 2011; McArthur, 1999; McLean, 2006a; Xenos, Pierrakaes, & Pintelas, 2002).

Actor-Network Analysis

The actor-network theory is utilized to study social, economic, and cultural effects across academic disciplines, including higher education. (Callon, 1986; Latour, 1987, 2005; Law & Hassard, 1999; Law, 1992; Schibik, Harrington, 2004; Xenos, Pierrakaes, & Pintelas, 2002).

Actor-network theory (ANT) is a type of methodology which looks at the agency of nonhuman issues and the effects of technology and other research factors upon humans and it has been used primarily in the fields of science, but has expanded in its applications across many other academic disciplines.

The basic premise of actor-network analysis is that no environment exists in a vacuum; in higher education, factors that affect faculty also affect higher educational administration, and both affect and are affected by technologies. Socially embedded contexts provide insights into the big picture — and how all of these factors converge to influence the entire environment and how the outcomes of decisions made with respect to each factor, are in turn, affected. In this research, the studies on faculty motivation that were reviewed provided invaluable insights into how their findings and recommendations could be utilized effectively.

Actor-network theory looks at how environments and networks act as a whole. An example, in the higher education elearning environment, students in an online course are encouraged to share their sociocultural backgrounds in their introductions, thus incorporating their cultural histories into their student experiences. They post their introductions via the learning management system; they share their experiences from their lives with the instructor and students in the class; and they integrate their experiences into the context of the online discussion using the technology and learning management system (LMS), yet another interface. All of these different environments and elements are brought together into a network to form a coherent whole.

According to actor-network theory, such actor-networks are potentially transient, existing in a constant making and re-making. This means that relations need to be repeatedly "performed" … (The teachers need to come to work each day, and the computers need to keep on running.)…Networks of relations are not intrinsically coherent, and may indeed contain conflicts (there may be adversarial relations between teachers/children, or computer software may be incompatible). Social relations, in other words, are only ever in process, and must be performed continuously (Wikipedia, 2011 http://en.wikipedia.org/wiki/ Actor-network_theory)

In the research conducted in this study, factors addressed intrinsic and extrinsic factors that motivated or de-motivated faculty to participate in online courses; few addressed nonhuman issues. None addressed nonhuman issues in any detail, such as the effects of technology, learning management systems, and other research factors, such as online course development and design factors. Yet, no environment exists in a vacuum; factors that students affect faculty; factors that affect faculty affect higher education administration; both affect and are affected by technologies; and, all of these factors affect students and student retention. Socially embedded contexts provide insights into the big picture; by introducing a search for actor-network factors the researcher was able to take a look at how the dynamics of diverse student learners, their interaction with the technology and LMS, with each other, and with the instructor, and all of the observed participants' interactions in each module's discussions of the course's subject matter, provided a big picture perspective of the course and participants. Too often the instructor is so busy juggling the course materials, the technologies, the internal and external email student correspondences, the discussion posts, and their other faculty responsibilities, that they have little time to take a minute while in situ to look at patterns that are occurring in the course. They may not even realize there

were problems experienced by students until long after the course when they receive their course evaluations, particularly if students don't put them on notice about their questions or concerns during the course. (Depending on the online environment and personalities of the students, they may not feel comfortable enough to voice concerns while in the class unless the instructor has made concerted efforts to encourage an open collaborative environment.)

The students may also be experiencing cognitive load issues associated with added stress from being in an online environment, from having to go outside the course to wikis or Wimbas, or VOIP (voice over internet protocol) sites where they must participate and post their feedback or assignments (Paas, Renkl, & Sweller, 2003; Sweller, 1994, 1999).

Cognitive load.

Cognitive load issues can be important considerations in online courses (Gannon Cook & Crawford, 2009). The learner can easily become overwhelmed with information and requirements, therefore, the online course should be structured simply to present information that progressively develops a cognitive and conceptual framework of understanding on the part of the learner. The learner must develop a knowledge base before moving on to the next bit of knowledge; a new learner may take a longer period of time to understand and develop an understanding of the subject than a learner with prior knowledge and understanding of the subject matter. "Then, once expertise is gained the newly crowned expert can reinvest the extra cognitive load into other things" (Wilson, 21 July 2008, ¶ 3). To-date, while the topic of cognitive load has been extensively discussed, there are few studies that have provided sufficient data so as to show there is a significant cognitive load impact on students participating in online courses, likely due to the fact that affective factors vary by student, such as the diverse student knowledge and skill levels (Paas, Renkl, & Sweller, 2003), as well as a number of other factors that could affect or not affect student cognitive loads in online courses.

Other factors.

In addition to cognitive load, other factors, such as the factors of cultural backgrounds, socioeconomic status, technological proficiency, and learning styles on the part of the students; and, content materials, online course design, learning management systems, as well as philosophical beliefs on the part of the teachers, there are yet other factors that are seldom even mentioned in the studies reviewed in this research. For example, language considerations could affect learning abilities of first-generation students; same for cultural courtesies that may keep some students from participating more fully.

Because there are so many unexplored factors that could contribute to the big picture of faculty motivation, the actor-network approach was utilized in this study to see if there were any consistent factors that could point to interactions with faculty teaching online in the courses researched, with design features, or with other actor-network factors that could shed light on faculty teaching online. The hope was that inferences could be made from these studies on which factors best motivate faculty participation in online courses. But without conducting more studies that parsed out individual factors that could have significant impact upon both online students and the faculty teaching or considering teaching those courses, it would be difficult to assign any attribution to actor-network factors in the assessment of what motivated faculty to teach online. Further research could

shed more light on best elearning practices to contribute to the lessons learned on faculty motivators and incentives to teach online.

The research in these thirty-eight studies that could identify "reasonable implications for practice from their findings" (Gall, Borg, Gall, 1996, p.748) for faculty considering or teaching online seemed to revolve around the preponderance of courses that cited first intrinsic motivation as the top motivator, particularly referencing faculty members' desires as teachers, to be helpful to their students, and help students find ways to take advantage of online courses to advance their education. The availability of online courses and programs and convenience were intrinsically encouraging to teachers who want to see students who may, otherwise, not be able to go to college have a way to earn their degrees. These reasons seemed to be de facto motivators for faculty who had entered the teaching profession to be of service to others, the studies, never the less named them as the primary motivators.

But many faculty already carry full or overload teaching and administrative workloads, so pride of helping students achieve and personal accomplishment and might not sustain continued DE instruction without the reinforcement of some type of external motivation. There needed to be some other factors that could better assure faculty participation and retention in teaching online courses.

Universities often take the stance that DE will be integrated into traditional curricula, requiring faculty to teach DE and e-courses as a part of their teaching load. However, the researcher wanted to look at this stance, particularly with respect to second and third generation DE faculty. Since the preponderance of the studies indicated that, after early adopters had taught online they often demurred from teaching again (Beggs, 2002; Bower, 2002; Betts, 2009; Betts & Sikorski, 2008; Birch, Burnett, 2009; Bruner, 2007; Gannon-Cook, Ley, Crawford, Warner, 2009; Johnston, Alexander, Conrad, & Fieser, 2000; O'Quinn & Corry, 2002, 2004; Panda & Mishra, 2008, Parker, 2003; Quinn, Trower, 2008), it seemed that finding which factors that could not only incentivize faculty to participate in teaching online, but to continue teaching online, could prove informative.

Some collaborative approaches between administration and faculty could create ongoing dialog for enlisting and retaining faculty teaching online courses and set the tone for future stability of faculty teaching online courses. The "carrot and stick" motivation was explored in several studies (Betts, 1998; Schifter, 2002; Wolcott, 1996), with the intention of exploring which key incentives were successful as rewards for teaching online. The results in the majority of the studies had indicated extrinsic motivators were ranking the highest, even as the intrinsic motivators had shown to be powerful, but the keys to getting and keeping faculty engaged and enlisted in teaching online seemed to rest with extrinsic motivators (Beggs, 2002; Bower, 2002; Betts, 2009; Betts & Sikorski, 2008; Birch, Burnett, 2009; Bruner, 2007; Gannon-Cook, Ley, Crawford, Warner, 2009; Johnston, Alexander, Conrad, & Fieser, 2000; O'Quinn & Corry, 2002, 2004; Panda & Mishra, 2008, Parker, 2003; Quinn, Trower, 2008; Wolcott, 2002). Extrinsic rewards consisting largely of monetary rewards, primarily salary, course releases, and course stipends; it also included the reverse, demotivators, such as insufficient rewards (inadequate or no salary increases, course releases, or stipends); these seemed to be the key motivators (or demotivators) to faculty to participate in teaching online. As much as one-fourth (25%) of these combined motivators and demotivators in the studies suggested these factors weighted greater than their individual factor loadings, thus raising the likelihood these motivators could provide successful motivation (Gannon-Cook,

Ley, Crawford, Warner, 2009; Johnston, Alexander, Conrad, & Fieser, 2000; Wolcott, 2002). Factors that had next motivated faculty had been: technical and administrative support (which included not only technical support, but the ability to have their faculty voices heard), and job advancement (administration recognition of faculty efforts invested in teaching online).

Interestingly, while tenure and promotion were discussed in a number of the studies, it did not rank high in the rankings of motivators to faculty in any of the studies cited in this research, perhaps because many faculty did not see it as a factor that should be included in consideration of teaching online. It may also be that faculty felt that many universities have been moving away from tenure as a part of the university structure, but the reasons for the low ranking of tenure consideration in teaching online was not clear from the studies cited in this research.

4. Summary

While the thirty-eight studies researched herein did not address how non-human factors could have effects on faculty motivation to teach online, the need for future research in this area was put forth in this study. A look at the big picture and the effects of these non-human factors on faculty motivation to teach online could provide important insights into not only faculty motivation, but also on student retention. Research, such as the study of actor-network approaches could yield thick data that could benefit higher education administrative bottom line decisions and yield positive long-range plans for universities that seek further research in this arena.

The facts, thus far, shed light on the fiction that faculty will teach online happily just because it is their nature to be facilitative as teachers. Lessons learned from the thirty-eight studies in this research on faculty motivators to teach online provide strong indicators of which factors are the most successful in enlisting and retaining faculty to teach online.

In the end, the fact remains that online courses will continue to grow and students will increasingly be attracted to the convenience of online learning. Universities are competing with other universities around the world, so the challenges to enlist and retain online faculty that were addressed in this study reflect what universities all over the world either are or will be experiencing in the near future. Whether there are a small or large number of faculty members participating in online teaching may depend largely on whether faculty members feel valued in their online efforts and that their voices are heard.

There does not seem to be a "one size fits all" solution as regards faculty motivational factors as regards participation in DE. The trend for universities to continue to expand DE courses, due to increased consumer demand and cost effectiveness will continue. "Higher education is no longer a sanctuary against a global marketplace for educational products" (Gannon-Cook, 2010, p.135); and institutions of higher education must meet the demands of its clients. As universities move past the introductory phases of elearning, and into a culture of integrated online course delivery, research that takes into consideration the entire picture of the university environment should be considered. Administrators must not only meet the demands for DE, but also the needs of its faculty, higher education's most important assets. Higher education must address faculty needs, so as to more appropriately support faculty efforts' in teaching online courses.

Paying some attention to at least a few of the extrinsic motivators mentioned in this study may offer solutions that prove cost-effective to meet the burgeoning needs of online learning. The price to universities who take the time to address faculty motivators may be well worth the investment.

5. Appendix A

List of Thirty-Eight Studies Researched in This Study (Also See Study References)

Facts and Fiction: Lessons From Research on Faculty Motivators and Incentives to Teach Online:

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Beggs, T. A. (2002
Bender, D., Wood, B., & Vredevoogd, J. (2004).
Betts, K. (1998).
Betts, K. S. & Sikorski, B. (2008)
Betts, K. S. (2009)
Birch, D., Burnett, B. (2009)
Bollinger, D. U., Wasilik, O. (2009).
Bower, B. (2002)
Bruner, J. (2007)
Cavanaugh, (2005)
Chang, C. L. (2008)
French, R. C. (2001)
Gannon-Cook, R., Ley, K., Crawford, C., Warner, A. (2009).
Halawi, L. and McCarthy, R. (2007).
Husmann, D., & Miller, M. (2001)
Jacobsen, D., M. (2000)
Johnston, T.C., Alexander, L, Conrad, C, & Fieser, J. (2000).
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Maguire, L.L. (2002).
McLean, J. (2006)
Neuhauser, C. (2002)
Ngu, B. H. (2002).
O'Quinn, L., & Corry, M. (2002)
O'Quinn, L. R., & Corry, M. (2004)
Panda, S. & Mishra, S. (2008).
Parker, A. (2003).
Quinn, K., Trower, C. (2008).
Schifter, C. (2000a),
Soldner, L.B., Lee, Y.R. Duby, P.B. (2004)
West, R. E., Waddoups, G., & and Graham, C. R. (2007)
Wolcott, L. L. (1996)

Xenos, M. Pierrakaes, C., & Pintelas, P. (2002)
Zhen, A. Garthwait, A., & Pratt, P. (2008)

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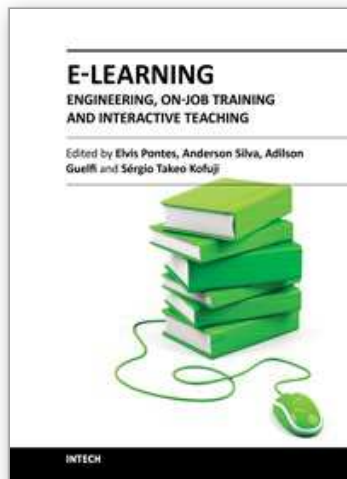
E-Learning - Engineering, On-Job Training and Interactive Teaching

Edited by Dr. Sergio Kofuji

Adaptive E-learning was proposed to be suitable for students with unique profiles, particular interests, and from different domains of knowledge, so profiles may consider specific goals of the students, as well as different preferences, knowledge level, learning style, rendering psychological profile, and more. Another approach to be taken into account today is the self-directed learning. Unlike the adaptive E-learning, the Self-directed learning is related to independence or autonomy in learning; it is a logical link for readiness for E-learning, where students pace their classes according to their own needs.This book provides information on the On-Job Training and Interactive Teaching for E-learning and is divided into four sections. The first section covers motivations to be considered for E-learning while the second section presents challenges concerning E-learning in areas like Engineering, Medical education and Biological Studies. New approaches to E-learning are introduced in the third section, and the last section describes the implementation of E-learning Environments.

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